Pan B antibody which is characterized by an equal binding and high affinity for all Apo B-containing lipoproteins in human plasma,

monoclonal antibody which [predominantly] binds to Apo E associated with VLDL ,

monoclonal Apo A-I antibody specifically immunoreactive with Apo A-I, and

monoclonal antibody which [predominantly] binds to Apo E in HDL,

wherein at least one of the antibodies binds to a stable, conformation independent epitope of a lipoprotein containing Apo E or Apo A-I that is uninfluenced by the lipid content of the lipoprotein, protein component of the lipoprotein or lipid associated with a specific lipoprotein.

Remarks

Rejections under 35 U.S.C. 112, first and second paragraphs

Claims 12, 13, 40, 44 and 45 were rejected under 35 U.S.C. 112, first and second paragraphs, as lacking written description and indefinite. These rejections are respectfully traversed if applied to the amended claims.

Claim 12 has been amended so that the preamble no longer refers to "relative concentrations" and the last step amended so that it is clear that the concentrations of two different apolipoproteins in the sample are determined.

The phrase "subtracting" in claim 12 has been deleted and replaced with "determining the difference between" which is supported by example 10, page 66, line 31, to page 68, line 11

Claim 40 has been amended to clarify that the pan B antibody binds to the anti-ApoC-III antibody-lipoprotein compex.

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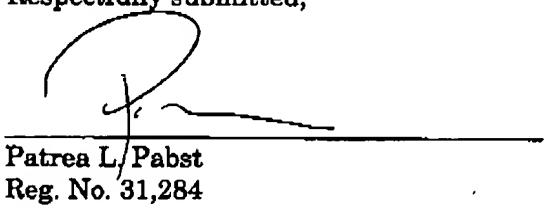
The last paragraph of claim 40 recites that the VLDL and HDL are measured in the same sample using immobilized anti-Apo A-I and anti-Apo B or anti-Apo C-III antibodies or measured by immunoprecipitation with the anti-Apo A-I and anti-ApoB antibodies or anti-Apo C-III antibodies in separate samples.

Please advise by phone if the examiner requires further clarification, since the undersigned fails to see what more may be required, if anything.

Claim 44 has been amended to delete the reference to "predominantly" solely to facilitate prosecution, with the understanding that the scope of the claim is not changed, merely clarified by this amendment.

It is believed all claims1-13, and 39-46 should now be in condition for allowance. The examiner is asked to contact the undersigned by phone if any further amendments are required to place the case in condition for allowance.

Respectfully submitted,



Patrea L. Pabst
Reg. No. 31,284

Date: January 2, 2003
HOLLAND & KNIGHT, LLP
2000 One Atlantic Center
1201 West Peachtree Street
Atlanta, GA 30309-3400
404-817-8473
404-817-8588 (Fax)

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AMENDMENT

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that the enclosed AMENDMENT and all documents shown as being attached is being facsimile transmitted to the U. S. Patent and Trademark Office on the date shown below.

Date: January 2, 2003

Jean Hicks

U.S.S.N. 08/970,045
Filed: November 13, 1997
MARKED UP COPY OF AMENDED CLAIMS
APPENDIX: Marked up copy of am nded claims

1. (four times amended) A method for determining the relative ratio of at least two different lipoproteins or apolipoproteins in a biological sample comprising:

immersing into the sample a solid phase material having separately immobilized thereon at least first and second antibody molecules, wherein the antibody molecules are selected from the group consisting of monoclonal antibodies, recombinant antibodies and antigen-binding antibody fragments thereof, wherein the antibody molecules are immunoreactive with at least two different lipoproteins, wherein the first and second antibodies bind to different stable, conformation independent epitopes that are uninfluenced by the lipid content of the lipoprotein, protein component of the lipoprotein or lipid associated with the specific lipoprotein, wherein the lipoproteins are selected from the group consisting of LDL, HDL and VLDL;

allowing the antibody molecules time to bind to the LDL, HDL, VLDL or apolipoproteins in the sample;

removing the solid phase material containing the immobilized antibody molecules;

determining the amount of lipoprotein or apolipoproteins bound by the immobilizedantibody molecules, and

comparing the amount bound which is specific for LDL, HDL, VLDL or each apolipoprotein in order to calculate the relative amounts of LDL, HDL, VLDL or apolipoproteins.

2. (amended) The method of claim 1 wherein the antibody molecules immobilized on the solid phase material are immunoreactive with lipoproteins selected from the group consisting of HDL and LDL.

3. (twice amended) The method of claim 2 wherein the antibodies to the HDL or LDL are selected from the group consisting of recombinant antibodies and antibody fragments.

4. (twice amended) The method of claim 3, wherein the first or second monoclonal antibodies are the anti-LDL monoclonal antibody produced by the hybridoma cell line HB_3cB_3 ATCC designation number HB 11612.

5. (twice amended) The method of claim 3, wherein the first or second monoclonal antibodies are recombinant anti-LDL $RcB_3M_1D_4$ ATCC designation number 69602.

6. (three times amended) The method of claim 1 further comprising determining the amount of lipoprotein lipid or lipid associating with apolipoprotein by staining of the material bound to the immobilized antibody using a lipid stain.

7. The method of claim 6 wherein the lipid stain is selected from the group consisting of Sudan Red 7B, Oil Red O, and Sudan Black B.

8. The method of claim 6 wherein the lipoprotein lipid is stained prior to immersing the immobilized antibodies.

9. (three times amended) The method of claim 6 further comprising measuring the amount of apolipoprotein or protein associated with the lipid in the sample, further comprising the step of providing antibodies immunoreactive with at

least one apolipoprotein, wherein the antibodies are coupled to a protein stain, and staining the apolipoprotein or protein associated with the lipid in the sample by reacting the protein stain coupled antibodies with the apolipoprotein or protein associated with the lipid in the sample.

10. The method of claim 1, wherein the apolipoprotein is selected from the group consisting of Apo A-I, Apo A-II, Apo B, Apo C-III, and Apo E.

11. The method of claim 1, wherein the biological sample is selected from the group consisting of blood, plasma, and serum.

12. (five times amended) A method of determining the [relative concentration] <u>concentrations</u> of [at least] two different apolipoproteins in a biological sample comprising:

mixing in solution [a] first and second monoclonal antibody molecules, each immunoreactive with a specific different apolipoprotein [into] <u>in</u> the sample, wherein at least one of the first and second monoclonal antibodies bind to a stable, conformation independent epitope of a lipoprotein that is uninfluenced by the lipid content of the lipoprotein, protein component of the lipoprotein or lipid associated with the specific lipoprotein in a conformation and lipid content independent manner;

allowing the monoclonal antibody molecules to bind to the apolipoproteins in the sample,

immersing into the mixture third immobilized monoclonal antibody molecules immunoreactive with a second, distinct epitope of one of the first or second apolipoproteins,

allowing the third immobilized monoclonal antibody molecules to bind to one of the apolipoproteins bound by either the first or second monoclonal antibodies,

determining the amount of apolipoprotein bound by the first and second monoclonal antibodies and the amount of protein bound by the third immobilized monoclonal antibodies, and

[subtracting from] determining the difference between the total apolipoprotein bound by the first [and second] monoclonal antibodies and the amount of protein bound by the third immobilized monoclonal antibodies, to yield the [amounts] amount of the first [and second apolipoproteins] apolipoprotein and determining the difference between the total apolipoprotein bound by the second monoclonal antibodies and the amount of protein bound by the third immobilized monoclonal antibodies, to yield the amount of the second apolipoprotein.

13. (amended) The method of claim 12 wherein the apolipoprotein bound by one of the monoclonal antibodies in solution is apolipoprotein Apo B-100.

39. (three times amended) A method for determining the relative ratio of LDL to HDL in a biological sample comprising

(a) determining the amount of LDL in the sample by

adding to the sample monoclonal antibody molecules immunoreactive with low density lipoprotein and not cross-reactive with high density lipoprotein and determining the amount of low density lipoprotein;

(b) determining the amount of HDL in the sample by

adding to the sample monoclonal antibody molecules immunoreactive with high density lipoprotein and not cross-reactive with low density lipoprotein and determining the amount of high density lipoprotein; and

(c) determining the ratio of the amount of low density lipoprotein with the amount of high density lipoprotein, wherein at least one of the monoclonal antibodies to LDL and HDL bind a stable, conformation independent epitope that is uninfluenced by the lipid content of the lipoprotein, the protein component of the lipoprotein or lipid associated with the specific lipoprotein.

40. (three times amended) A method for determining the relative ratio of VLDL to HDL in a biological sample comprising

(a) determining the amount of VLDL in the sample by

determining the amount of Apo C-III present in the VLDL in the sample by

providing Pan B antibody which is characterized by an equal binding and high affinity for all Apo B-containing lipoproteins in human plasma,

providing monoclonal antibody specifically immunoreactive with Apo C-III,

contacting the anti-ApoC-III antibody reactive with Apo C-III with the biological sample to form complexes between the anti-ApoC-III antibody and the Apo C-III containing lipoprotein particles,

contacting the Pan B antibody with the biological sample containing the anti-ApoC-III antibody bound to the Apo C-III containing lipoprotein particles to form a complex of the Pan B antibody with the anti-ApoC-III antibody-lipoprotein particles,

separating the complexed Pan B-anti-ApoC-III antibody-lipoprotein particles from the biological sample, and

determining the amount of complexed Pan B-anti-ApoC-III antibody-lipoprotein particles, which is the amount of Apo C-III present in VLDL in the anti-Apo C-III anti-Apo B complexed material in the sample;

and

(b) determining the amount of HDL in the sample by

determining the amount of Apo C-III present in the HDL in the sample by

providing Apo A-I monoclonal antibody specifically immunoreactive with Apo A-I,

providing monoclonal antibody specifically immunoreactive with Apo C-III,

contacting the antibody reactive with Apo C-III with the biological sample to form complexes between the anti-Apo C-III antibody and the Apo C-III containing lipoprotein particles,

contacting the anti-Apo A-I antibody with the biological sample to form complexes with the anti-Apo C-III antibody-Apo C-III containing lipoprotein particles,

separating the complexed anti-Apo C-III antibody-Apo C-III containing lipoprotein particles from the biological sample,

determining the amount of Apo C-III present in HDL in the anti-Apo C-III-anti-Apo A-I complexed material in the sample, and

determining the ratio of Apo C-III present in VLDL in the sample to Apo C-III present in HDL in the sample, which is the ratio of VLDL to HDL,

wherein the VLDL and HDL are measured in the same sample using immobilized anti-Apo A-I and anti-Apo B or anti-Apo C-III antibodies or measured by immunoprecipitation with the anti-Apo A-I and anti-ApoB antibodies or anti-Apo C-III antibodies in separate samples,

wherein at least one of the monoclonal antibodies bind to a stable, conformation independent epitope that is uninfluenced by the lipid content of the lipoprotein, apolipoprotein or lipid associated with a specific lipoprotein selected from the group consisting of Apo AI, Apo B, and Apo CIII.

41. (three times amended) A method for determining the relative ratio of VLDL to HDL comprising

(a) determining the amount of VLDL in the sample by

determining the amount of Apo E present in the VLDL in the sample by

providing Pan B antibody which is characterized by an equal binding and high affinity for all Apo B-containing lipoproteins in human plasma,

providing monoclonal antibody which specifically binds to Apo E associated with VLDL,

contacting the antibodies reactive with Apo E associated with VLDL with the biological sample to form complexes between the anti-ApoE antibodies and Apo E containing particles,

contacting Pan B antibody with the biological sample containing the complexes between the anti-ApoE antibodies and ApoE containing particles to form complexes of anti-ApoB-anti-ApoE-ApoE containing particles, and

determining the amount of Apo E in the complexes of anti-ApoB-anti-ApoE-ApoE containing particles, which is the Apo E present in VLDL in the sample;

(b) removing the complexes of anti-ApoB-anti-ApoE-ApoE containing particles, either by binding of the anti-Apo E antibodies to an immobilized surface or centrifugation of sample to remove the complexes of anti-ApoB-anti-ApoE-ApoE containing particles;

and

(c) determining the amount of HDL in the sample by

determining the amount of Apo E present in the HDL in the sample by

providing Apo A-I monoclonal antibody immunoreactive specifically with Apo A-I,

contacting antibodies reactive with Apo E in HDL particles with the biological sample to form complexes between the anti-ApoE antibodies and Apo E containing particles,

contacting the Apo A-I monoclonal antibody with the biological sample to form complexes of the anti-ApoE antibodies-ApoE containing particles-anti-ApoA-I,

determining the amount of Apo E present in HDL in the complexes of the anti-ApoE antibodies-ApoE containing particles-anti-Apo A-I in the sample, and

determining the ratio of Apo E present in VLDL in the sample and Apo E present in HDL in the sample which is the ratio of VLDL to HDL,

wherein at least one of the monoclonal antibodies bind to a stable, conformation independent epitope that is uninfluenced by the lipid content of the lipoprotein, protein component of the lipoprotein or lipid associated with a specific lipoprotein selected from the group consisting of Apo B, Apo AI, and Apo E.

42. (three times amended) A kit for determining the relative ratio of VLDL to HDL comprising

Pan B antibody which is characterized by an equal binding and high affinity for all Apo B-containing lipoproteins in human plasma,

monoclonal or recombinant antibody specifically immunoreactive with Apo C-III, and

monoclonal or recombinant Apo A-I antibody specifically immunoreactive with Apo A-I,

wherein at least one of the monoclonal or recombinant antibodies specifically bind to a stable, conformation independent epitope of a lipoprotein including Apo C-III or Apo A-I that is uninfluenced by the lipid content of the lipoprotein, protein component thereof or lipid associated with a specific lipoprotein selected from the group consisting of Apo AI, and Apo CIII.

43. (twice amended) The kit of claim 42 wherein the anti-Apo C-III or anti-A-1 monoclonal or recombinant antibody molecules are selected from the group consisting of monoclonal antibodies, recombinant antibodies, and antigen binding antibody fragments thereof that specifically bind to a stable, conformation independent epitope which is uninfluenced by the lipid content of the lipoprotein, protein component thereof, or lipid associated with a specific lipoprotein.

44. (three times amended) A kit for determining the relative ratio of VLDL to HDL comprising

Pan B antibody which is characterized by an equal binding and high affinity for all Apo B-containing lipoproteins in human plasma,

monoclonal antibody which [predominantly] binds to Apo E associated with VLDL ,

monoclonal Apo A-I antibody specifically immunoreactive with Apo A-I, and

monoclonal antibody which [predominantly] binds to Apo E in HDL,

wherein at least one of the antibodies binds to a stable, conformation independent epitope of a lipoprotein containing Apo E or Apo A-I that is uninfluenced by the lipid content of the lipoprotein, protein component of the lipoprotein or lipid associated with a specific lipoprotein.

46. (twice amended) A kit for determining the relative ratio of LPA-I and LPA-II lipoprotein particles comprising

monoclonal or recombinant Apo-A-I antibody specifically immunoreactive with Apo A-I lipoproteins in human plasma; and

monoclonal or recombinant Apo A-II antibody specifically immunoreactive with Apo A-II,

wherein the anti-Apo A-I or anti-Apo A-II monoclonal or recombinant antibody molecules are selected from the group consisting of monoclonal antibodies, recombinant antibodies, and antigen-binding antibody fragments thereof that specifically bind to a stable, conformation independent epitope of a lipoprotein containing Apo A-I or Apo A-II which is uninfluenced by the lipid content of the lipoprotein, protein component of the lipoprotein, or lipid associated with a specific lipoprotein.

47. (twice amended) The kit of claim 46 wherein the anti-Apo A-I and anti-Apo A-II monoclonal or recombinant antibody molecules are selected from the group consisting of monoclonal antibodies, recombinant antibodies, and monoclonal antibody fragments that specifically bind to a stable, conformation independent epitope which is uninfluenced by the lipid content of the lipoprotein, protein component of the lipoprotein, or lipid associated with a specific lipoprotein.

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CLEAN COPY OF AMENDED CLAIMS
APPENDIX: Clean c py of claims as amended

1. (four times amended) A method for determining the relative ratio of at least two different lipoproteins or apolipoproteins in a biological sample comprising:

immersing into the sample a solid phase material having separately immobilized thereon at least first and second antibody molecules, wherein the antibody molecules are selected from the group consisting of monoclonal antibodies, recombinant antibodies and antigen-binding antibody fragments thereof, wherein the antibody molecules are immunoreactive with at least two different lipoproteins, wherein the first and second antibodies bind to different stable, conformation independent epitopes that are uninfluenced by the lipid content of the lipoprotein, protein component of the lipoprotein or lipid associated with the specific lipoprotein, wherein the lipoproteins are selected from the group consisting of LDL, HDL and VLDL;

allowing the antibody molecules time to bind to the LDL, HDL, VLDL or apolipoproteins in the sample;

removing the solid phase material containing the immobilized antibody molecules;

determining the amount of lipoprotein or apolipoproteins bound by the immobilizedantibody molecules, and

comparing the amount bound which is specific for LDL, HDL, VLDL or each apolipoprotein in order to calculate the relative amounts of LDL, HDL, VLDL or apolipoproteins.

2. (amended) The method of claim 1 wherein the antibody molecules immobilized on the solid phase material are immunoreactive with lipoproteins selected from the group consisting of HDL and LDL.

3. (twice amended) The method of claim 2 wherein the antibodies to the HDL or LDL are selected from the group consisting of recombinant antibodies and antibody fragments.

4. (twice amended) The method of claim 3, wherein the first or second monoclonal antibodies are the anti-LDL monoclonal antibody produced by the hybridoma cell line HB_3cB_3 ATCC designation number HB 11612.

5. (twice amended) The method of claim 3, wherein the first or second monoclonal antibodies are recombinant anti-LDL $RcB_3M_1D_4$ ATCC designation number 69602.

6. (three times amended) The method of claim 1 further comprising determining the amount of lipoprotein lipid or lipid associating with apolipoprotein by staining of the material bound to the immobilized antibody using a lipid stain.

7. The method of claim 6 wherein the lipid stain is selected from the group consisting of Sudan Red 7B, Oil Red O, and Sudan Black B.

8. The method of claim 6 wherein the lipoprotein lipid is stained prior to immersing the immobilized antibodies.

9. (three times amended) The method of claim 6 further comprising measuring the amount of apolipoprotein or protein associated with the lipid in the sample, further comprising the step of providing antibodies immunoreactive with at

least one apolipoprotein, wherein the antibodies are coupled to a protein stain, and staining the apolipoprotein or protein associated with the lipid in the sample by reacting the protein stain coupled antibodies with the apolipoprotein or protein associated with the lipid in the sample.

10. The method of claim 1, wherein the apolipoprotein is selected from the group consisting of Apo A-I, Apo A-II, Apo B, Apo C-III, and Apo E.

11. The method of claim 1, wherein the biological sample is selected from the group consisting of blood, plasma, and serum.

12. (five times amended) A method of determining the concentrations of two different apolipoproteins in a biological sample comprising:

mixing in solution first and second monoclonal antibody molecules, each immunoreactive with a specific different apolipoprotein in the sample, wherein at least one of the first and second monoclonal antibodies bind to a stable, conformation independent epitope of a lipoprotein that is uninfluenced by the lipid content of the lipoprotein, protein component of the lipoprotein or lipid associated with the specific lipoprotein in a conformation and lipid content independent manner;

allowing the monoclonal antibody molecules to bind to the apolipoproteins in the sample,

immersing into the mixture third immobilized monoclonal antibody molecules immunoreactive with a second, distinct epitope of one of the first or second apolipoproteins,

allowing the third immobilized monoclonal antibody molecules to bind to one of the apolipoproteins bound by either the first or second monoclonal antibodies,

determining the amount of apolipoprotein bound by the first and second monoclonal antibodies and the amount of protein bound by the third immobilized monoclonal antibodies, and

determining the difference between the total apolipoprotein bound by the first monoclonal antibodies and the amount of protein bound by the third immobilized monoclonal antibodies, to yield the amount of the first apolipoprotein and determining the difference between the total apolipoprotein bound by the second monoclonal antibodies and the amount of protein bound by the third immobilized monoclonal antibodies, to yield the amount of the second apolipoprotein.

13. (amended) The method of claim 12 wherein the apolipoprotein bound by one of the monoclonal antibodies in solution is apolipoprotein Apo B-100.

39. (three times amended) A method for determining the relative ratio of LDL to HDL in a biological sample comprising

(a) determining the amount of LDL in the sample by

adding to the sample monoclonal antibody molecules immunoreactive with low density lipoprotein and not cross-reactive with high density lipoprotein and determining the amount of low density lipoprotein;

(b) determining the amount of HDL in the sample by

adding to the sample monoclonal antibody molecules immunoreactive with high density lipoprotein and not cross-reactive with low density lipoprotein and determining the amount of high density lipoprotein; and

(c) determining the ratio of the amount of low density lipoprotein with the amount of high density lipoprotein, wherein at least one of the monoclonal antibodies to LDL and HDL bind a stable, conformation independent epitope that is uninfluenced by the lipid content of the lipoprotein, the protein component of the lipoprotein or lipid associated with the specific lipoprotein.

40. (three times amended) A method for determining the relative ratio of VLDL to HDL in a biological sample comprising

(a) determining the amount of VLDL in the sample by

determining the amount of Apo C-III present in the VLDL in the sample by

providing Pan B antibody which is characterized by an equal binding and high affinity for all Apo B-containing lipoproteins in human plasma,

providing monoclonal antibody specifically immunoreactive with Apo C-III,

contacting the anti-ApoC-III antibody reactive with Apo C-III with the biological sample to form complexes between the anti-ApoC-III antibody and the Apo C-III containing lipoprotein particles,

contacting the Pan B antibody with the biological sample containing the anti-ApoC-III antibody bound to the Apo C-III containing lipoprotein particles to form a complex of the Pan B antibody with the anti-ApoC-III antibody-lipoprotein particles,

separating the complexed Pan B-anti-ApoC-III antibody-lipoprotein particles from the biological sample, and

determining the amount of complexed Pan B-anti-ApoC-III antibody-lipoprotein particles, which is the amount of Apo C-III present in VLDL in the anti-Apo C-III anti-Apo B complexed material in the sample;

and

(b) determining the amount of HDL in the sample by

determining the amount of Apo C-III present in the HDL in the sample by

providing Apo A-I monoclonal antibody specifically immunoreactive with Apo A-I,

providing monoclonal antibody specifically immunoreactive with Apo C-III,

contacting the antibody reactive with Apo C-III with the biological sample to form complexes between the anti-Apo C-III antibody and the Apo C-III containing lipoprotein particles,

contacting the anti-Apo A-I antibody with the biological sample to form complexes with the anti-Apo C-III antibody-Apo C-III containing lipoprotein particles,

separating the complexed anti-Apo C-III antibody-Apo C-III containing lipoprotein particles from the biological sample,

determining the amount of Apo C-III present in HDL in the anti-Apo C-III-anti-Apo A-I complexed material in the sample, and

determining the ratio of Apo C-III present in VLDL in the sample to Apo C-III present in HDL in the sample, which is the ratio of VLDL to HDL,

wherein the VLDL and HDL are measured in the same sample using immobilized anti-Apo A-I and anti-Apo B or anti-Apo C-III antibodies or measured by immunoprecipitation with the anti-Apo A-I and anti-ApoB antibodies or anti-Apo C-III antibodies in separate samples,

wherein at least one of the monoclonal antibodies bind to a stable, conformation independent epitope that is uninfluenced by the lipid content of the lipoprotein, apolipoprotein or lipid associated with a specific lipoprotein selected from the group consisting of Apo AI, Apo B, and Apo CIII.

41. (three times amended) A method for determining the relative ratio of VLDL to HDL comprising

(a) determining the amount of VLDL in the sample by

determining the amount of Apo E present in the VLDL in the sample by

providing Pan B antibody which is characterized by an equal binding and high affinity for all Apo B-containing lipoproteins in human plasma,

providing monoclonal antibody which specifically binds to Apo E associated with VLDL,

contacting the antibodies reactive with Apo E associated with VLDL with the biological sample to form complexes between the anti-ApoE antibodies and Apo E containing particles,

contacting Pan B antibody with the biological sample containing the complexes between the anti-ApoE antibodies and ApoE containing particles to form complexes of anti-ApoB-anti-ApoE-ApoE containing particles, and

determining the amount of Apo E in the complexes of anti-ApoB-anti-ApoE-ApoE containing particles, which is the Apo E present in VLDL in the sample;

(b) removing the complexes of anti-ApoB-anti-ApoE-ApoE containing particles, either by binding of the anti-Apo E antibodies to an immobilized surface or centrifugation of sample to remove the complexes of anti-ApoB-anti-ApoE-ApoE containing particles;

and

(c) determining the amount of HDL in the sample by

determining the amount of Apo E present in the HDL in the sample by

providing Apo A-I monoclonal antibody immunoreactive specifically with Apo A-I,

contacting antibodies reactive with Apo E in HDL particles with the biological sample to form complexes between the anti-ApoE antibodies and Apo E containing particles,

contacting the Apo A-I monoclonal antibody with the biological sample to form complexes of the anti-ApoE antibodies-ApoE containing particles-anti-ApoA-I,

determining the amount of Apo E present in HDL in the complexes of the anti-ApoE antibodies-ApoE containing particles-anti-Apo A-I in the sample, and

determining the ratio of Apo E present in VLDL in the sample and Apo E present in HDL in the sample which is the ratio of VLDL to HDL,

wherein at least one of the monoclonal antibodies bind to a stable, conformation independent epitope that is uninfluenced by the lipid content of the lipoprotein, protein component of the lipoprotein or lipid associated with a specific lipoprotein selected from the group consisting of Apo B, Apo AI, and Apo E.

42. (three times amended) A kit for determining the relative ratio of VLDL to HDL comprising

Pan B antibody which is characterized by an equal binding and high affinity for all Apo B-containing lipoproteins in human plasma,

monoclonal or recombinant antibody specifically immunoreactive with Apo C-III, and

monoclonal or recombinant Apo A-I antibody specifically immunoreactive with Apo A-I,

wherein at least one of the monoclonal or recombinant antibodies specifically bind to a stable, conformation independent epitope of a lipoprotein including Apo C-III or Apo A-I that is uninfluenced by the lipid content of the lipoprotein, protein component thereof or lipid associated with a specific lipoprotein selected from the group consisting of Apo AI, and Apo CIII.

43. (twice amended) The kit of claim 42 wherein the anti-Apo C-III or anti-A-1 monoclonal or recombinant antibody molecules are selected from the group consisting of monoclonal antibodies, recombinant antibodies, and antigen binding

antibody fragments thereof that specifically bind to a stable, conformation independent epitope which is uninfluenced by the lipid content of the lipoprotein, protein component thereof, or lipid associated with a specific lipoprotein.

44. (three times amended) A kit for determining the relative ratio of VLDL to HDL comprising

Pan B antibody which is characterized by an equal binding and high affinity for all Apo B-containing lipoproteins in human plasma,

monoclonal antibody which binds to Apo E associated with VLDL ,

monoclonal Apo A-I antibody specifically immunoreactive with Apo A-I, and

monoclonal antibody which binds to Apo E in HDL,

wherein at least one of the antibodies binds to a stable, conformation independent epitope of a lipoprotein containing Apo E or Apo A-I that is uninfluenced by the lipid content of the lipoprotein, protein component of the lipoprotein or lipid associated with a specific lipoprotein.

46. (twice amended) A kit for determining the relative ratio of LPA-I and LPA-II lipoprotein particles comprising

monoclonal or recombinant Apo-A-I antibody specifically immunoreactive with Apo A-I lipoproteins in human plasma; and

monoclonal or recombinant Apo A-II antibody specifically immunoreactive with Apo A-II,

wherein the anti-Apo A-I or anti-Apo A-II monoclonal or recombinant antibody molecules are selected from the group consisting of monoclonal antibodies,

recombinant antibodies, and antigen-binding antibody fragments thereof that specifically bind to a stable, conformation independent epitope of a lipoprotein containing Apo A-I or Apo A-II which is uninfluenced by the lipid content of the lipoprotein, protein component of the lipoprotein, or lipid associated with a specific lipoprotein.

47. (twice amended) The kit of claim 46 wherein the anti-Apo A-I and anti-Apo A-II monoclonal or recombinant antibody molecules are selected from the group consisting of monoclonal antibodies, recombinant antibodies, and monoclonal antibody fragments that specifically bind to a stable, conformation independent epitope which is uninfluenced by the lipid content of the lipoprotein, protein component of the lipoprotein, or lipid associated with a specific lipoprotein.

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